

REMARKS

In the Office Action of September 24, 2002, the Examiner initially indicated that the applicant's arguments filed on August 21, 2002 with regard to the rejection of claim 7 as being anticipated by the Pfister et al. U.S. Patent No. 3,782,303 have been fully considered and deemed not persuasive. In continuing the rejection of claim 7, the Examiner indicated that the features upon which the applicant relied, namely the elimination of a second cooling impeller and the use of a single impeller, were not recited in the rejected claim 7.

By the present amendment, independent claim 7 has been amended to more clearly indicate that the furnace blower assembly does not include an auxiliary fan specifically dedicated for creating a flow of cooling air. Instead, claim 7 clearly sets forth a blower assembly having a single impeller enclosed with an impeller housing such that the impeller both draws exhaust gases from the furnace into the impeller chamber and creates a flow of cooling air that passes through the motor housing, over the motor and into the impeller housing through an inlet port. As described previously, the elimination of the auxiliary fan significantly reduces the load felt by the blower motor such that the size of the blower motor can be reduced while providing the same performance characteristics. Additionally, the elimination of the auxiliary fan allows the overall height of the motor housing to be reduced.

Based upon the changes to claim 7, independent claim 7 is believed to be allowable over the Pfister '303 patent cited by the Examiner.

Priority

In the Office Action, the Examiner included verbiage regarding the requirements for a claim of priority under 35 USC §119(e). Upon reviewing the application, the applicant is unclear as to the reason for such statement on behalf of the Examiner. A review of the application indicates that on page 2, lines 5-11, the

applicant includes a proper claim to priority to U.S. Provisional Application Serial No. 60/140,144, which was filed on June 21, 1999.

Drawings

In the Office Action, the Examiner indicated that the substitute drawings sheets filed on August 23, 2002 have been approved by the Examiner but include informalities identified by the draft person. The applicant will address the informalities raised by the draft person upon allowance of the present application and before the payment of the issue fee.

Claim Rejections

In the Office Action, claims 3, 5-8 and 10-12 were rejected under 35 USC §102(e) as being anticipated by the Conner U.S. Patent No. 5,839,374. Claims 7, 8, 11 and 12 were rejected under 35 USC §102(f)/103(a) because it was the Examiner's opinion that claims 7, 8, 11 and 12 were directed to an invention not patentably distinct from claims 1, 3, 14, 16, 18 and 25 of commonly assigned U.S. Patent No. 6,231,311, yet the '311 patent had a different inventive entity from that of the present invention.

By the present amendment, claims 3, 5-8 and 10-12 have been amended to more particularly claim the invention and to define subject matter clearly patentable over the applied references. Based on the above amendments, the claims remaining in the application are believed to be in condition for allowance.

Claim 3

By the present amendment, independent claim 3 has been amended to more particularly state that the motor housing includes a vent aperture formed at the outer end of the motor housing such that the vent aperture is spaced from the impeller housing. As required by claim 3, the motor housing is closely mounted to the impeller housing such that cooling air can enter the motor housing only through the vent

aperture formed in the motor housing. Thus, when the motor housing is mounted to the impeller housing, rotation of the single impeller draws cooling air into the motor housing only through the vent aperture such that the entire supply of cooling air passes over the motor to cool the motor.

In rejecting claim 3, the Examiner relied upon the Conner '374 patent. The Conner '374 patent teaches a motor included within a motor housing that utilizes a separate auxiliary fan for creating a flow of cooling air. As can be understood in Fig. 1 of the '374 patent, a separate set of openings are contained on each end of the motor housing 32. When the motor is operating, an inflow of cooling air enters through the outer openings, flows over the motor to cool the motor and is discharged through the second set of openings near the inner end of the motor housing. Thus, the cooling air flow created by the auxiliary fan flows into the motor housing and out of the motor housing without entering into the impeller housing containing the main impeller used to withdraw exhaust gases.

In the description of the Conner '374 patent, the hole formed in the back plate of the impeller near the motor shaft creates a negative vacuum in the impeller cavity. The negative vacuum draws a small amount of air into the impeller cavity through the small opening between the motor shaft and the impeller cavity. However, this flow of air is not drawn over the motor to cool the motor as is the case in the present application.

When reviewing the Conner '374 patent, it is clear that the rotation of the impeller within the impeller cavity cannot create the desired flow of cooling air to adequately cool the motor due to the two spaced sets of openings within the motor housing. Specifically, the negative pressure developed within the impeller cavity draws only a negligible amount of air flow into the small opening surrounding the motor shaft. The air being drawn into the impeller cavity around the motor shaft can flow completely around the outer surface of the motor housing without ever passing

through the motor housing. Thus, this flow of air does not pass over the motor to provide motor cooling. Alternatively, the air could pass through the lower openings in the motor housing such that the air would enter into the impeller housing without ever passing over the motor and thus not cool the motor.

For these reasons, the blower disclosed in the Conner '374 patent requires a separate auxiliary fan to provide motor cooling. Although such a cooling fan is not specifically shown in the '374 patent, the use of two sets of openings spaced along the motor housing clearly teaches an inflow port for the cooling air and an outflow port for the air once it has passed over the motor and prior to its entry into the impeller housing.

Further, independent claim 3 has been amended to indicate that the motor housing is closely mounted to the impeller housing such that the only inflow point for cooling air is through the vent aperture formed in the motor housing. Since the vent aperture is formed near the outer end of the motor housing, the rotation of the impeller draws cooling air into the motor housing, over the motor and into the impeller housing to cool the motor without the use of an auxiliary fan. Once again, this feature is not taught or suggested, nor rendered obvious, by any of the patents cited by the Examiner. For this reason, independent claim 3 is believed to be in condition for allowance.

Dependent claims 5 and 6 depend directly or indirectly from claim 3 and are thus believed to be allowable based on the above comments, as well as in view of the subject matter of each claim.

Claim 7

In the Office Action, claim 7 was also rejected based upon the Conner '374 reference. As discussed above, independent claim 7 has been amended to more clearly state that the furnace blower assembly is devoid of an auxiliary fan for creating

a flow of cooling air. Further, the motor housing is defined as having an outer end including vent apertures such that external cooling air can enter the motor housing only through the vent aperture. As described previously, the Conner '374 patent teaches a motor housing having both inflow openings and outflow openings such that the auxiliary fan can create a flow of cooling air over the motor.

Although the Conner '374 patent suggests the creation of a small air flow into the impeller cavity around the motor shaft, this air flow is insufficient to cool the motor. Further, this inflow of air can be drawn around the motor housing and does not need to pass through the motor housing and over the motor, as is required by amended independent claim 7.

For the above-noted reasons, amended independent claim 7 is believed to be allowable over the cited Conner '374 reference.

Claims 8 and 10-12 depend directly or indirectly from claim 7 and are thus believed to be allowable in view of the subject matter of claim 7 as well as the subject matter of each claim.

Rejection Under 35 USC §102(f)/103(a)

In the Office Action, claims 7, 8, 11 and 12 were rejected under 35 USC § 102(f)/103(a) because the Examiner claimed the applicant did not invent the claimed subject matter. By the present amendment, claim 7 has been amended to more particularly define the subject matter that is believed to be sufficiently different from the subject matter of claims 1, 3 14, 16, 18 and 25 of the '311 patent. Upon reviewing claims 7, 8, 11 and 12 of the present application, the inventive entity named in the present application is believed to be correct. Specifically, claim 7 is directed to a system that includes a close mounting between the impeller housing and the motor housing where the motor housing includes at least one vent aperture formed at the outer end of the motor housing such that a flow of cooling air enters the motor

housing only through the vent aperture. In the '311 reference, as best illustrated in Fig. 1, the motor housing includes both upper and lower apertures. Specifically, the lower apertures define a skirt that encloses a rotating auxiliary fan. Clearly, the inventions disclosed in the present application and those covered by the '311 patent are sufficiently different from each other such that the inventors of the present invention can be different than the inventive entity included in the '311 patent. Thus, the Examiner is requested to remove the rejection of claims 7, 8, 11 and 12 under 35 USC §102(f)/103(a).

Double Patenting

In the Office Action, the Examiner rejected claims 7, 8, 11 and 12 under the judicially created doctrine of obviousness-type double patenting in view of U.S. Patent No. 6,231,311. As the Examiner correctly indicated, the '311 patent is commonly owned with the present application. However, the applicant has not yet filed a Terminal disclaimer since the claims in the present application have been amended to more particularly define an invention that is believed to be patentable over the subject matter in the '311 patent. However, the Examiner is advised that a Terminal Disclaimer will be entered by the applicant if deemed necessary upon examination of the newly amended claims.

In the Office Action, the Examiner requested the applicant to show that the invention included in the present application and as included in U.S. Patent No. 6,231,311 were commonly owned at the time of the invention in the present application. In this regard, the inventors of the '311 patent, William S. Gatley and Dale Stewart, were both employed by the common assignee of the '311 patent and the present application. The present application lists William S. Gatley as the sole inventor and the present application has been assigned to the common assignee. The '311 patent was filed on September 17, 1999, while the provisional application upon which the present application is based, was filed on June 21, 1999. The applicant, through its undersigned attorney, states that the '311 patent and the present application

were both commonly owned at the time of the invention in the present application. If required, the applicant will submit a signed Declaration stating such facts. However, it is not believed to be necessary at this time based upon the filing dates and information contained within the present application and the issued '311 patent.

In the Office Action, claims 3, 5-8 and 10-12 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent No. 6,296,478 in view of the Conner '374 reference. It is the applicant's belief that this rejection is improper, since the cited U.S. Patent No. 6,296,478 is not commonly assigned to the assignee of the present application. Although the '478 reference lists the same inventor as the present application, the '478 patent is not commonly assigned with the present application. Additionally, the present invention claims priority to a provisional application filed on June 21, 1999. The filing date of this provisional application, which is properly cross-referenced in the present application, is prior to the August 3, 2000 filing date of the cited U.S. Patent No. 6,296,478. Thus, the '478 patent was not filed prior to the filing date of the present application. For this reason, the Examiner is requested to remove the obviousness-type double patenting rejection based upon the Conner '374 patent and U.S. Patent No. 6,296,478.

In the Office Action, the Examiner also rejected claims 3, 5-8 and 10-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent No. 6,318,358. Again, the '358 patent is not commonly assigned to the assignee of the present application. Instead, the '358 patent includes the same inventive entity and is assigned to a different legal entity. The '358 patent was also filed on August 3, 2000, which was after the provisional application filing date of June 21, 1999 to which the present application claims priority. Thus, the '358 patent is not properly applied in a double-patenting rejection and the removal of such finding is requested.

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Conclusion

By the present amendment, claims 3, 5-8 and 10-12 have been amended to more accurately define and particularly point out the inventive features of the present invention. Based upon the above arguments for allowance, the Examiner is requested to pass these claims to allowance.

The Examiner is invited to contact the applicant's undersigned attorney with any questions or comments, or to otherwise facilitate prosecution of the application.

Respectfully submitted,

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